

Ohio. 15th, Iowa, Nev. 16th, Colo., Idaho. 18th, Minn., Oregon, Wis. 19th, Colo., Dak. 22d, Ga. 23d, N. J., Va. 24th, Ohio. 25th, Ga., Minn. 27th, Mont. 28th, La. 29th, Ariz., Utah.

MAXIMUM RAINFALLS IN ONE HOUR OR LESS.

The table shows that the greatest rate per minute for a five minute period was .09 of an inch at Savannah, Ga., on the 6th. The rate per minute for this period at the other stations given was, .07 at Jupiter, Fla., 17th, and at Washington City, 6th; .04 at New York City, 3d; .03 at Saint Louis, Mo., 14th; .024 at Dodge City, Kans., 3d; .02 at Boston, Mass., 5th; and .01 at Cincinnati, Ohio, 2d. The greatest rate per minute for a ten minute period was, .08, at Savannah, Ga., 6th and 8th; .06 at Washington City, 6th; .045 at Jupiter, Fla., 17th; .03 at New York City, 3d; .025 at Saint Louis, Mo., 14th; .02 at Boston, Mass., 1st; Dodge City, Kans., 3d, and .01 at Cincinnati, Ohio, 2d. The heaviest rainfall for one hour, 2.20 inches, was measured at Savannah, Ga., on the 6th; at Washington City, 1.05 fell in one hour on the 6th, while at the remaining

stations given rainfall to equal or exceed one inch an hour was not registered.

The following table is a record of the heaviest rainfalls during August, 1889, for periods of five and ten minutes and one hour, as reported by regular stations of the Signal Service furnished with self-registering gauges:

Station.	Maximum fall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
	Inch.		Inch.		Inch.	
Boston, Mass.	0.10	5	0.20	1	0.25	1
Cincinnati, Ohio	0.05	2	0.07	2	0.10	2
Chicago, Ill.					0.10	8, 13
Detroit, Mich.					0.10*	9
Dodge City, Kans.	0.12	3	0.21	3	0.45	3
Jupiter, Fla.	0.35	17	0.45	17	0.60	17
New York City	0.20	3	0.30	3	0.55	3
Savannah, Ga.	0.45	6	0.80	6, 8	2.20	6
San Francisco, Cal.					T.*	
Saint Louis, Mo.	0.15	14	0.25	14	0.47	14
Washington City	0.35	6	0.60	6	1.05	6

*Total for month.

WINDS.

The prevailing winds during August, 1889, are shown on chart ii by arrows flying with the wind. In New England, the middle Atlantic states, and the Lake region, south to west winds were most frequently noted; over the Florida Peninsula, the west Gulf states, and the southeastern slope of the Rocky Mountains, south to east winds prevailed; in the east Gulf states they were mostly from northeast to east; in the upper Mississippi valley, southeast to southwest; in the extreme Northwest, and on the middle-eastern slope of the Rocky Mountains, south to southeast; over the northern plateau region, and along the north and south Pacific coast, north to west; on the middle Pacific coast, northwest to southwest on the immediate coast, and southeast in the Sacramento Valley; in the south Atlantic states, the Ohio Valley and Tennessee, the northeastern slope of the Rocky Mountains, and the middle and southern plateau regions, variable.

HIGH WINDS (in miles per hour).

Maximum velocities of fifty miles, or more, per hour, other than those given in the table of miscellaneous meteorological data, were reported as follows: Valentine, Nebr., 54, s., 31st; Winnemucca, Nev., 52, sw., 17th.

LOCAL STORMS.

Severe storms were most frequently reported in Kansas and Minnesota, where they were noted for five dates; in New York for four dates; in Pennsylvania for three dates; in North Carolina, New Jersey, Georgia, Indiana, Nebraska, Dakota, Colorado, Missouri, Illinois, and West Virginia for two dates; and in Connecticut, Virginia, Maine, Massachusetts, Mississippi, Wisconsin, Alabama, Iowa, New Mexico, Tennessee, South Carolina, Utah, and California for one date. In states and territories other than those named no severe storms have been reported. They were reported in the greatest number of states, six, on the 14th; in five on the 13th; in four on the 3d and 7th; in three on the 1st and 4th; in two on the 2d, 5th, 6th, 9th, 12th, 15th, 17th, 19th, and 20th; and in one on the 10th, 16th, 18th, 22d, 23d, 25th, and 26th. The following are descriptions of the storms referred to:

1st. Connecticut.—Wallingford: a rain storm began during the early morning and continued until after 7 a. m. The water in Northrup's brook rose at an alarming rate and by 8 a. m. it was higher than ever known before. The Quinnipiack River also rose rapidly and the manufacturing establishments had to stop operations on account of the high water.—*The Palladium, New Haven, Conn., August 2.* Middletown: the severe rain storm during the day was the heaviest ever known in this section. The Connecticut River has been rising rapidly and

a large amount of wreckage has been floating down the stream. The city sewers have overflowed and a number of houses have been flooded. All of the factories have shut down.—*Boston, Mass., Daily Globe, August 1.* North Carolina.—Soapstone Mount: a severe thunder and rain storm passed over this place between 4.20 p. m. and 5.30 p. m.; in this section several persons were shocked and one person was killed by lightning.—*Report of Mr. H. L. Kimrey.* Virginia.—Richmond: a storm broke over this city about 12.30 a. m., during which the city railway stables were struck by lightning.—*Democrat and Chronicle, Rochester, N. Y., August 2.* Danville: heavy rain prevailed during the day and the Dan River was higher than ever known before. Factories and small dwellings on the river banks were flooded and two bridges and one long trestle have been carried away. The loss is estimated at \$15,000, exclusive of damage to railroads.—*Union and Advertiser, Rochester, N. Y., August 2.*

2d. New Jersey.—Elizabeth: during a heavy thunder-storm this morning lightning struck and ignited the Mammoth Pottery Works. The damage done is estimated at \$35,000.—*Herald, Rochester, N. Y., August 3.* New York.—Albany: heavy peals of thunder were heard early in the morning, but, outside of west Albany, no rain fell in the city, although in the immediate vicinity the storm was very severe. The storm did great damage in west Troy. The heavy rain overflowed Dry River, which passes through the city, and cellars and portions of streets were flooded, causing several thousand dollars damage. Mannville, a small hamlet in the western part of West Troy, is inundated. The water on the lowlands is two feet deep in many places, and the damage to property is considerable. The New York Central Railway has been washed out in many places in this section.—*The Argus, Albany, N. Y., August 3.* Troy: a heavy rain-storm, accompanied by high winds and lightning, passed over this city this afternoon, flooding the streets and doing other damage. A part of the new canal culvert at 31st street was carried away.—*Herald, Rochester, N. Y., August 3.* Watkins, Schuyler Co.: a very destructive storm passed over this valley, in a narrow belt, during the afternoon. The lower half of Watkins Glen was flooded and several bridges were washed away. The damage will reach several thousand dollars. Much damage was also done to railroads and railroad bridges in this section.—*Oswego, N. Y., Daily Times, August 2.*

3d. Kansas.—Concordia: a thunder-storm, moving from northwest to southeast, occurred between 6.30 and 7.20 p. m. About six miles west of this city the storm was accompanied by hail, which extended over an area about three miles in

breadth. The hail-stones are reported to have been unusually large, and caused much damage in Jewell, Republic, and Cloud counties. *Massachusetts*.—Taunton: during a storm, which occurred in the morning, 1.97 inch of rain fell in fifty minutes. Cellars were flooded and the sewers were inadequate to carry off the water. The aggregate damage will be large. A washout was reported on the Old Colony Railroad between this city and Fall River.—*New Haven, Conn., Union, August 3*. During a thunder-storm on this date, a small tornado, covering a track of about three hundred feet, passed north-eastward in the vicinity of Middleborough, overturning several buildings, and tearing a large barn filled with hay from its foundation. At Bridgewater animals in the field were killed by lightning, and trees were torn up by the roots. At Provincetown the storm was the most severe ever recorded at the station; there was a rainfall of two inches in one hour; hail-stones one-fourth inch in diameter fell at its beginning.—*Bulletin of the New England Meteorological Society for August, 1889*. *New York*.—New York City: the storm which occurred in the morning was more severe around New York than in the city itself, chiefly in Brooklyn and its suburbs, where many streets were flooded, and damage was done by lightning. The storm was very destructive along the Harlem Railway, but the most serious damage was done on the new depressed tracks between Fordham and Melrose, the tunnel affording an aqueduct through which the water rushed three feet or more deep, washing out the banks of the east side of the track and covering the track with several inches of sand and gravel, causing interruption of traffic.—*New York Daily Times, August 4*. Poughkeepsie: a heavy rain-storm prevailed here this afternoon, with frequent hail showers. Similar weather is reported all along the Hudson and in the interior. In southern Ulster county the storm was accompanied by heavy wind. In the interior of all the river counties the crops are damaged 70 per cent., and streams everywhere are greatly swollen. Nyack: the most terrific storm of the season prevailed here this afternoon. The streets are flooded and travel has been suspended. *New York Daily Times, August 4*. *Pennsylvania*.—Reading: The rain storm which passed over this city during the afternoon was the severest of the season, causing the water to rise very rapidly in all streams in the county. The pressure of the water in Angelica Creek was so great that the upper ice-dam broke and portions of the ice-houses were washed away, over four hundred tons being lost.—*The Record, Philadelphia, Pa., August 5*. Morristown: during the heavy rain storm which occurred in the afternoon Plymouth Creek rose six feet in less than half an hour, overflowing its banks and inundating meadows. The storm was the severest, for its short duration, of the season. The public roads were inundated, in places, to a depth of two feet.—*Ledger and Transcript, Philadelphia, Pa., August 5*. *Rhode Island*.—Providence: the thunder and rain storm which occurred during the day caused considerable damage to the highways of Pawtucket. The entire telephone service was demoralized.—*New York Daily Times, August 4*.

4th. Georgia.—Augusta: a violent thunder-storm, accompanied by unusually heavy rain, began at 10 p. m. and ended during the night. From 10 p. m. until midnight a rainfall of 3.32 inches was recorded, flooding parts of the city until the morning of the 5th. Washouts occurred on the South Carolina and the Narrow Gauge railroads. The storm moved from southwest to northeast. *Indiana*.—Mitchell: the storm in this section during the day was very disastrous to life and property. A wagon containing a family of five persons was blown from the roadside into Black Creek, and all were drowned. Scores of houses were unroofed and several dwellings were demolished. The storm was general throughout southwestern Indiana.—*Herald, Rochester, N. Y., August 6*. Newburgh: a violent wind and rain storm passed over here this morning, doing great damage. Several persons are reported killed.—*Post-Express, Rochester, N. Y., August 5*. *Mississippi*.—Coffeeville: near Sparta Church, this evening, a cloud-burst destroyed crops for miles around.—*Democrat and Chronicle, Rochester, N. Y., 5th*.

5th. Indiana.—Richmond: a most destructive thunder-storm, accompanied by heavy rain, occurred a few miles above this city. The excessive rain flooded streams and prostrated corn, and a number of cattle were killed by lightning. Hail fell at Centreville, where large stones covered the ground. The Elkhorn River rose to flood height in fifteen minutes.—*The Enquirer, Cincinnati, Ohio, August 6*. *Kansas*.—Clear Water: a destructive storm passed south of this city during the day, demolishing two houses and injuring the occupants. Several horses and many cattle were killed, and the corn crop in this vicinity was damaged to the extent of about \$12,000. The path of the storm was a quarter of a mile wide and six miles long.—*Union and Advertiser, Rochester, N. Y., August 6*.

6th. Kansas.—Kansas City: a small tornado passed over this city at 6 a. m. As it progressed it appeared to gather force and increase in size. It was followed by a heavy electrical storm, and rain fell in torrents for half an hour, deluging the streets and interrupting traffic.—*Democrat and Chronicle, Rochester, N. Y., August 7*. *Nebraska*.—Wayne: a cloud-burst occurred over Cedar and Wayne counties in the morning, flooding Hartington with twelve inches of water, and Cole-ridge with nine inches in four and one-half hours. Nearly all the bridges on Bow Creek, Cedar Co., have been swept away, and the Hartington branch of the Omaha road was washed out.—*The Journal, Sioux City, Iowa, August 8*.

7th. Dakota.—Aberdeen: a severe hail storm is reported this evening from the northern and central townships of Brown county, cutting a swath several miles in length through unharvested grain, and causing great damage. Hail-stones eight inches in circumference fell during the storm.—*Duluth, Minn., Daily News, August 8*. *Georgia*.—Savannah: a violent thunder-storm, accompanied by heavy rain and high wind, passed over this city from north to south between 12.12 p. m. and 8.30 p. m. The rainfall was excessively heavy, 0.80 inch fell from 4.15 p. m. to 4.25 p. m., and from 4 p. m. to 5 p. m. 2.20 inches of rain were recorded. Maximum velocity of the wind thirty-eight miles per hour from the northwest at 4.10 p. m. A frame building in course of erection was blown down, injuring four men. *Minnesota*.—Mazeppa: the heaviest rain storm experienced for many years, accompanied by wind and hail, passed over this city during the day, blowing down trees and out-buildings. The loss to farmers in small grain is very large.—*Duluth, Minn., Daily News, August 8*. Hallock: at 2 a. m., this, Kittson county, was visited by a severe thunder-storm accompanied by hail. Houses and barns were struck by lightning and wheat fields were partially, if not wholly, destroyed by the hail.—*The Daily Gate City, Keokuk, Iowa, August 8*. *Wisconsin*.—La Crosse: a severe thunder and rain-storm occurred during the afternoon, during which time a rainfall of 2.40 inches was recorded. Five houses in this city were struck by lightning. On the river division of the Milwaukee railroad the tracks were obstructed by stones and earth washed down from the bluffs.—*Union and Advertiser, Rochester, N. Y., August 8*.

9th. Colorado.—Florence: a very destructive rain storm visited this locality in the evening and continued over two hours, causing the Arkansas River to rise higher than ever before known. The streets in this city were turned into rivers and people living in the northern portion were forced to leave their houses. The ranchmen living along the river suffered the loss of all their crops, besides horses and cattle, and many buildings have been wrecked. Every bridge spanning the river within ten miles of this city has been washed away. Two miles below this place over three hundred yards of the Atchison, Topeka, and Santa Fé Railway were washed out, and the Denver and Rio Grande track is almost obliterated in places. Many dead horses and cattle, and thousands of railroad ties, were floating down the river. The loss to this locality is estimated at \$75,000. Pueblo: The severe storm which occurred in the evening was the worst ever experienced in this vicinity. The water rose very rapidly in the Arkansas River during the night and on the morning of the 10th a large portion of the city

was flooded. Estimated damage in this city \$100,000.—*Denver, Colo., Republican, August 11.* Iowa.—Des Moines: a thunder-storm, accompanied by very heavy rain, began at 12.03 a. m. and ended at 8 a. m. Lightning struck several houses in this city, and the rain washed away street pavements and caused sewers to break.

10th. Dakota.—Rapid City: a rain storm occurred here in the afternoon. As the storm progressed southward it developed a more damaging nature. Near Hermosa the rain fell in torrents, flooding the entire country. Between French and Battle Creeks the rain turned to hail, causing damage to corn and other growing crops in that section.—*The Daily Journal, Rapid City, Dak., August 14.*

12th. Kansas.—Atchison: the worst thunder and rain storm ever known here occurred this afternoon, doing much injury in this section to crops and property. Outlying towns, telegraph wires, and the railroads suffered considerable damage.—*Kansas City, Mo., Times, August 13.* Bendena: a severe thunder-storm, accompanied by heavy rain and high wind, passed over this county during the day. The lightning struck in several places and the water swept away numerous bridges and washed out the roads.—*Bendena, Kans., Echo, August 17.* Leavenworth: a severe thunder-storm, moving from northwest to east, began 5.40 p. m., and heavy rain fell from 6.05 p. m. to 7.30 p. m., during which time 1.91 inch was recorded. This was the severest rain and electric storm of the season. Much damage was done in this city by lightning and water: nearly all the cellars in the business portion of the city were flooded. During the storm strong and sudden gusts of wind blew from nearly all directions, shifting suddenly from northwest to east, then to south, and in a few minutes back to north, causing much injury to buildings, trees, and crops. The damage in this city is estimated at from \$20,000 to \$25,000. A second thunder-storm, accompanied by heavy rain, moving from southwest to northeast, began at 11 p. m. and ended during the night. All railroad trains coming to the city were delayed by washouts and land-slides. The Missouri River rose nearly two feet during the night of the 12-13th, carrying away part of the pontoon bridge in course of construction in this city. Nebraska.—Pawnee City: a cloud-burst occurred this afternoon. Bridges are gone and much damage is done, but the crops are not seriously injured.—*Post-Express, Rochester, N. Y. August 13.*

12-13th. Kansas.—Hiawatha: the hail and rain storm, which continued throughout the night, was the severest ever known in this county. The hail did much damage in the north side of the county. The entire town of Robinson is flooded, and the Great Island track is under three feet of mud and water for three miles.—*Saint Louis, Mo., Republican, 14th.*

13th. Missouri.—Kansas City: a thunder-storm moving from south to north, attended by vivid lightning and almost continuous peals of thunder and heavy rain, passed over this city at about 2 a. m.; rain ending at 4.30 a. m. One row of buildings, undermined by the heavy rain, caved in, and several washouts occurred along the railroads in this vicinity. New Mexico.—Albuquerque: a terrific thunder and wind storm occurred during the afternoon. Hugh whirlwinds of sand came down from the mountains, at intervals, blinding pedestrians, and the clouds were very heavy and dark, but no rain fell.—*Union and Advertiser, Rochester, N. Y., August 14.* New York.—New York City: at 5.10 p. m. a cloud-burst occurred at the Tremont Station on the New York and Harlem Railroad, precipitating such a quantity of water that the tracks were flooded to a depth of eight inches. Trains were delayed two hours.—*The Sun, New York City, August 14.*

13-14th. Illinois.—Russell: a tornado struck just east of this town during the night and caused great damage. Holloway's horse ranch and other places were wrecked. The storm appeared to have been about two hundred feet wide and a mile and a half long.—*Chicago, Ill., Morning News, Aug. 15.*

14th. Missouri.—Springfield: a thunder-storm, moving from southwest to northeast, began 12.57 p. m. The wind suddenly veered to northwest and increased in velocity to

forty-two miles per hour at 1.10 p. m., damaging orchards and shade trees in this section. New Jersey.—Asbury Park: the heaviest electrical storm that has ever visited this section occurred during the evening. Several buildings were slightly damaged by lightning. Rain fell in torrents and flooded the streets, stopped the electric street cars, and extinguished the electric street lights. Ocean Grove Brook overflowed its banks and flooded several stores. The sluice-ways under the railroad tracks were choked with debris at midnight, and the water backed up into the houses to a depth of six feet.—*Argus, Portland, Me., August 16.* Paterson: a terrific storm burst over this city during the morning. Streets were washed out, cellars flooded, and sewers choked so that the water spouted out of the man-holes to a height of ten feet. In some places the water in the streets was four feet deep. Similar conditions prevailed at Passaic City.—*Ledger and Transcript, Philadelphia, Pa., August 15.* New York.—New York City: the storm this morning was probably the severest of the season. The rain came down in torrents and considerable damage was done to railroad and other property in this vicinity, and on Long Island, and in New Jersey.—*Post-Express, Rochester, N. Y., August 14.* Oswego: the gale which prevailed on Georgian Bay during the day was the severest of the season, the wind blowing steadily at the rate of over forty miles per hour from the northwest. The steamer "Chamberlain" and the tug "Saucy Jim" lost a raft of 16,000 logs off Cape Rich. The tugs "Onaping" and "Superior" also lost a raft of 25,000 logs twenty miles east of Cabet's Head.—*The Palladium, Oswego, N. Y., August 20.* Pennsylvania.—Philadelphia: unusually heavy rain occurred between 3 a. m. and 5 a. m., 1.15 inch being recorded in forty minutes; thunder and lightning prevailed from 3.30 a. m. to 4 a. m. The water quickly overloaded the sewers and backed up into the streets, making them impassable; the first floors in a number of houses were flooded, and the streets were badly washed in various places, especially in the lower portions of the city, where the most damage was done. Easton: the rain storm which passed over this city during the evening was the most violent that has ever been experienced in this section. Within two hours the water in the Lehigh River rose eight feet. Two bridges and a dam on the Clinton branch of the Lehigh Valley Railroad, and all Warren county bridges between Philipsburgh and Stewartsville, have been washed away. The banks in the Morris Canal have broken in two places. The damage to the streets in this place will amount to about \$2,000. Lock Haven: a destructive hail storm passed over a portion of this (Clinton) county in the afternoon, accompanied by an unusual electrical disturbance. At Woolwich hail-stones as large as hens' eggs fell, doing great damage to crops. Bethlehem: an unusually severe rain storm occurred early this morning, and was followed by a violent thunder-storm in the evening. Reports from the country state that the storm caused great damage to the corn crop. The Lehigh River, at this place, is rising at the rate of two feet an hour, and the lowlands are inundated. A serious land-slide occurred on the Lehigh and Susquehanna Railroad, at Treichler's Station, to-night.—*Ledger and Transcript, Philadelphia, Pa., August 15.* Tennessee.—Gallatin: this section was visited by a severe storm in the evening; the rain fell in torrents, and the wind blew down trees, etc. Paris: the most severe storm for many years set in about 5 p. m., and lasted forty-five minutes. Great damage was done to crops, especially to corn; it is estimated that in the path of the storm three-fifths of the latter crop is cut off.—*The Daily American, Nashville, Tenn., August 16.* Memphis: a terrific wind-storm, accompanied by thunder and lightning, passed over this city at 5.55 p. m. The wind attained a maximum velocity of thirty-seven miles per hour from the north, and an extreme velocity at the rate of sixty miles per hour, causing much damage to outhouses, etc.

15th. South Carolina.—Columbia: a cloud-burst occurred this evening and poured down a tremendous flood over an area of forty miles square in the Wateree Valley, doing incalculable

lable damage to growing crops, and causing extensive washouts. The losses to farmers and railroads will aggregate several hundred thousand dollars.—*Union and Advertiser, Rochester, N. Y., August 17.* Charleston: a cloud-burst occurred at 7 p. m. between Sumter and Columbia. There was no thunder and lightning but a steady downpour of rain; it is estimated that twelve inches of rain fell in two hours. The area affected is about five miles wide and about fifty or sixty miles long. Seven miles of the Camden branch and South Carolina Railway are washed away. Cotton fields about Gadsden have been washed clean, and hundreds of cattle drowned.

15-16th. West Virginia.—Wheeling: a terrific storm prevailed over Lost Creek Valley during the night. Harrison county is inundated, and no trains are moving on the Clarksburgh and Western Railroad to-day. The loss is very heavy throughout that region.—*Baltimore, Md., American, August 17.*

17th. California.—Daggett: the heaviest thunder, wind, and rain storm ever known in this section began at 3 p. m., and continued two hours. The heavy rain flooded houses and cellars, and several houses were blown down. All telegraphic communication east of this place was cut off.—*Los Angeles, Cal., Daily Herald, August 17.* Minnesota.—Saint Hilaire: a severe storm, accompanied by high wind, passed six miles north of this town in the evening, doing great damage to the wheat crop. Chunks of ice one inch square were found after the storm passed.—*Democrat-Chronicle, Rochester, N. Y., 19.*

18th. Utah.—Salt Lake City: rain began at 8.20 p. m. and continued during the remainder of the day. The rainfall was reported unusually heavy in surrounding districts, causing washouts on the Union Pacific and Utah Central railroads. A land-slide, caused by a cloud-burst, occurred at Weber Canyon, wrecking a Union Pacific freight train.

19th. Colorado.—Glenwood Springs: a cloud-burst near this city did much damage. The losses to merchandise, furniture, etc., will reach several thousand dollars.—*Denver News, Denver, Colo., August 19.*

19-20th. Minnesota.—Saint Paul: a thunder-storm which began 10.29 p. m., 19th, continued until after midnight. Several houses in this city were struck by lightning, and the telephone wires were considerably interfered with. The rain during the storm was very heavy, and some damage was done by flooding sidewalks and cellars.

20th. Maine.—Winthrop: a storm of thirty minutes' duration passed over this place during the day. The sky was obscured by a very black cloud, which hung very low. Rain fell in torrents, and the wind blew a gale, accompanied by heavy thunder. Corn and other crops were seriously injured.—*The Nashville, Tenn., Banner, August 21.* Minnesota.—Duluth: a severe thunder-storm, moving from southwest to northeast, began at 12.05 a. m. and continued until 5 a. m., in which time 2.08 inches of rain were recorded. A large dam in this city gave away under the heavy pressure of water, flooding many houses. It is estimated that the damage done by the flood, in this city alone, will reach \$50,000. Reports from the surrounding country, particularly to the southwest, state that the storm was equally severe there. The Saint Paul and Duluth Railroad suffered severely from washouts and land-slides.

22d. Alabama.—Anniston: this city was visited in the afternoon by the severest rain storm, accompanied by wind and hail, that has occurred in this section for many years. In less than an hour the entire city was flooded and many streets were impassable. The approach to the Georgia Pacific is one vast sheet of water for hundreds of feet.—*The Daily Advertiser, Montgomery, Ala., August 23.*

23d. Pennsylvania.—Philadelphia: a heavy rain storm, accompanied by thunder and lightning, began at 2.15 p. m. and ended 7.15 p. m. Great damage resulted in the low lying sections of the city by overflowed sewers and flooded streets and cellars. The storm moved from southwest to northeast.

25th. Minnesota.—Duluth: a moderate thunder-storm passing from west to east, began 6.50 a. m. and ended 9.20 a. m. Large hail fell between 8.30 a. m. and 8.33 a. m. The stones were of unusual size, some of them being one inch in diameter, and one stone measured five inches in circumference. In formation the stones resembled buttons flattened on two sides.

26th. North Carolina.—Rockingham: a cloud-burst occurred over this city and vicinity during the day, destroying the dams and the machinery of several mills. The loss is estimated at \$100,000.—*Morning Herald, Baltimore, Md., 28th.*

WATER-SPOUT.

Charleston, S. C.: a water-spout was observed off Sullivan's Island at 1.50 p. m., 12th. It lasted but a few minutes, and then disappeared.

INLAND NAVIGATION.

FLOODS.

The following reports indicate that the most destructive floods of August, 1889, occurred in Connecticut, Maryland, Pennsylvania, New Jersey, Virginia, Colorado, Missouri, and Nebraska during the first half of the month:

New Haven, Conn., 1st: heavy damage from severe rains in the Housatonic and Naugatuck valleys has been reported. People in that section have suffered more than in any other part of the state. The Shelton Mills at Birmingham were obliged to stop operations, as the wheels are completely under water. The meadows above Birmingham were three or four feet under water. The big dam at Birmingham had eight feet of water on its top; the water was never before known to be so high. Many meadows are ruined by sand and sediment left by the flood.—*Boston, Mass., Daily Globe, August 1.*

Baltimore, Md., 1st: many villages, and hundreds of western Maryland farms, are flooded, all the recent destructive storms having been east of the Blue Ridge Mountains. This morning the streets of Union Bridge and other towns were rivers, and for miles along the western Maryland Railroad, in Carroll and Baltimore counties, farm lands are submerged. The bridges over the Monocacy River in Frederick county have been swept away and other damage done. On the flat land of the eastern shore counties the wheat crop is ruined.—*The Record, Philadelphia, Pa., August 2.*

Reading, Pa., 1st: the Schuylkill is overflowing its banks, both above and below this city, doing much damage. In the coal regions a number of collieries have been obliged to shut down. The crops in this section have been much injured by the constant rainfall.—*The Record, Philadelphia, Pa., August 2.*

Mount Holly, N. J., 3d: the recent heavy rains which culminated in the terrific storms on the 1st and 2d have inflicted a great deal of damage on the farming community. The greatest injury was done in the valley of the Rancocas River, which has its source in the regions near Brown's Mills, and from that point to its mouth at Delanco the loss has been heavy. Hundreds of acres of corn have either been washed out entirely or rendered worthless. A lake covering about ten or twelve acres spread south of Monroe street, this city, and in the business portion a ferry was established to convey people to dry places. At 2 a. m. the water reached the engine room of the electric light works, extinguishing the fires, and leaving the city in total darkness. A record of flood at this place, which has been kept for nearly one hundred years, shows that the present flood rose ten inches higher than ever before known. The total loss to this, Burlington county, will exceed \$150,000.—*The Record, Philadelphia, Pa., August 4.*

Martinsville, Va., 3d: this, Henry, county has been visited by one of the most destructive freshets ever known here; the water was as high, if not higher, than during the freshet of